

Reflecting on Teaching an Introductory Course with no Mid-terms or Finals

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Introduction

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- ▶ (i) is (even) harder to do accurately during remote times!
- ▶ What if we lean towards (ii) and hope that some of them pick up some good habits?

Introduction

A quick overview of the Fall 2021 iteration of **MATH163: Introduction to Mathematical Reasoning**:

- ▶ Prerequisite: Pre-Calculus 30 or Foundations of Mathematics 30.
- ▶ Fully remote delivery.
- ▶ One section of ~ 85 students, most of which in computer science, education, mathematics, or statistics.
- ▶ Materials organized into 12 weekly units, each consisting of lecture videos + slides and coursenotes.
- ▶ Evaluation: 6 Assignments (80%) and 5 Reflections (20%).

Reflections

- ▶ 12 opportunities — one per week. Each student can choose any 5 to complete.
- ▶ Usually includes a prompt that takes 15-20 minutes to read/watch, and some open-ended questions.
- ▶ Students are asked to write a short (≤ 250 words) response.
- ▶ Graded on a 2 point scale:
 - ▶ 0/2 if no submission;
 - ▶ 1/2 for an incomplete/irrelevant submission;
 - ▶ 2/2 otherwise.

Reflections

List of reflection topics and prompts used:

1. What Makes Math Engaging?
2. Mistakes Grow Your Brain
3. A High School Student's Poem about Math
4. Weapons of Math Destruction
5. Math as Means to Equality
6. The Simplest Math Problem No One Can Solve
7. How is MATH163 going?
8. The Roles of Proofs versus Explanations
9. Math Homework in the Age of Photomath and Chegg
10. What's the Answer to Viral Math Problems?
11. Do We Have an Innumeracy Pandemic?
12. That Feeling When The Light Bulb Goes Off

Assignments

- ▶ Released every other week, each covering 2 units of lectures.
- ▶ 10 days between release and due dates.
- ▶ Submitted and graded via Crowdmark.
- ▶ Graders were instructed to be generous with partial credits to incorrect attempts that display earnest effort.
- ▶ Detailed solutions were posted after due dates.

Assignments

From Assignment 2 onwards, we had the following for Q1:

1. [5 Points] Choose a question from Assignment 1 that you did not get full marks on, and read the solutions posted on Canvas. Prepare a new solution, in your own words, that you think would be worth full marks.

Some questions (you don't have to submit responses to) that may help you better contextualize your error:

- What was the nature of your error on that assignment question? Was it primarily content misunderstanding, or was it an issue of communication?
- If your errors were primarily due to misunderstanding course content, what course material did you not understand when you submitted your assignment that you now understand?
- If your errors were primarily due to an issue of communication, what aspects of your initial submission were unclear?
- How can you avoid making similar errors on the current and subsequent assignments?

(This exercise aims to help you learn from your mistakes and develop the ability to revise and polish your work. We intend to give full marks to all attempts of this question, and it's on you to decide how much learning you actually get out of this.)

And if you got full marks on Assignment 1, then for this problem you can choose a problem on that assignment that you found particularly interesting, and explain what you found interesting about it. You can focus on any and all of the problem itself, why you think your solution was awesome, what you learnt from our prepared solutions, and so on. Again, we intend to give full marks to all attempts here.)

On Cheating

We all try our best to deter cheating...

3. In this MATH163 assignment problem, we study the contrapositive and converse of some statements. For each of the following implications,
 - (i) Write down its contrapositive and its converse in plain English.
 - (ii) Are the two statements you wrote down in (i) true or false? Briefly justify your response.
 - (a) [3 Points] “Today is Monday implies that tomorrow is Tuesday.”
 - (b) [3 Points] “If you copy your homework answers from Chegg, you commit an academic misconduct.”
 - (c) [3 Points] “3 divides 19 whenever 3 divides 18.”

On Cheating

... but it still happens!



Find solutions for your homework

Search

home / study / math / other math / other math questions and answers / for each of the following implications, (i) write down its contrapositive and...

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“I was able to learn a lot more this way instead of studying for tests. I felt I was able to showcase what I had learned better through assignments rather than a 50–60% final. I wish more math courses were structured like this course but I understand that plagiarism is a real problem. I’m almost glad COVID happened as I never would have had such a positive learning experience in a math university course. (I was a +90% student in high school and loved math before university)”

Going Forward

I'll probably teach MATH163 again in Fall 2022! Some things I'm pondering:

- ▶ To final exam or to not final exam?
- ▶ Use existing lecture videos for a hybrid delivery, or back to 100% in-person lectures circa. 2019?
- ▶ My assignment solutions all ended up on Coursehero. Should I try video solutions or something else?

Questions? Comments? Ideas? Feel free to reach out to me (au@math.usask.ca) and chat!